

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of the claims in the application.

**Listing of Claims:**

1. (Currently Amended) A method for multi-detector detection of electrons, the method comprising the steps of:

directing a primary electron beam, beam to propagate along a first optical axis through a column, to interact with said column including a deflection assembly having deflectors operable to apply deflection fields to the primary electron beam at spaced-apart locations along the column, at least a first of said locations being located upstream of an inner lens detector assembly and at least a second of said locations being located downstream of said inner lens detector assembly, said upstream and downstream directions each defined with respect to the direction of the primary beam propagation;

deflecting a trajectory of the primary electron beam from the first optical axis to propagate along a second optical axis substantially parallel to and spaced-apart from the first optical axis;

impinging the primary electron beam on an inspected object, thereby producing electrons resulting from at least one of reflection and scattering of the primary electron beam from the inspected object, each of the produced electrons having an initial trajectory with respect to the inspected object;

directing, by introducing a substantial electrostatic field, the electrons reflected or scattered from the inspected objects towards multiple interior detectors, whereas at least some of the directed electrons are reflected or scattered at small angle in relation to the inspected object; detectors; and

receiving detection signals of detected electrons from at least one interior inner lens detector of said inner lens assembly, wherein the initial trajectory of at least some of the detected electrons is substantially coincident with one of the first and the second optical axis.

2. (Currently Amended) The method of claim 1 wherein the step of introducing a substantial electrostatic field comprises introducing a first voltage potential difference between the inspected object and a first portion of the column and introducing a second voltage potential difference between a second portion of the column and the inspected object.

3. (Currently Amended) The method of claim 1 ~~whereas~~ wherein the first portion of the column is positioned below the second portion and wherein the first voltage potential difference is smaller than the second voltage potential difference.

4. (Currently Amended) The method of claim 1 further ~~comprises~~ comprising a step of processing the received detection signals to provide an indication about a defect or a process variation.

5. (Currently Amended) The method of claim 1 further ~~comprises~~ comprising a step of varying the substantial electrostatic field to alter the collection zones of the multiple interior detectors.

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Currently Amended) The method of claim 1 wherein an inspected area of the inspected object is positioned within the substantial electrostatic ~~lens~~ field.

10. (Original) The method of claim 1 further comprises a preliminary step of determining a measurement angle between the primary electron beam and the inspected object.

11. (Original) The method of claim 10 wherein the measurement angle ranges between acute angles and obtuse angles.

12. (Original) The method of claim 1 wherein detected electrons include electrons from a lower portion of a high aspect ratio hole.

13. (Currently Amended) A system for multi-detector detection of electrons, the system comprises:  
comprising:

~~multiple interior detectors for providing detection signals;~~

~~a column through which electrons may propagate;~~

~~and means for directing a primary electron beam; beam to propagate along a first optical axis through the ~~a~~ column, to interact with an inspected object~~ said column including a deflection assembly having deflectors operable to apply deflection fields to the primary electron beam at spaced-apart locations along the column, at least a first of said locations being located upstream of an inner lens detector assembly and at least a second of said locations being located downstream of said inner lens detector assembly, said upstream and downstream directions each defined with respect to the direction of the primary beam propagation; and said deflectors operable to deflect a trajectory of the primary electron

beam from the first optical axis to propagate along a second optical axis substantially parallel to and spaced-apart from the first optical axis;

means for impinging the primary electron beam on an inspected object, thereby producing electrons resulting from at least one of reflection and scattering of the primary electron beam from the inspected object, each of the produced electrons having an initial trajectory with respect to the inspected object;

means for directing, by introducing a substantial electrostatic field, the electrons reflected or scattered from the inspected objects towards the multiple interior detectors,

whereas wherein the initial trajectory of at least some of the directed electrons are reflected or scattered at small angle in relation to the inspected object is substantially coincident with one of the first and the second optical axis.

14. (Currently Amended) The system of claim 13 wherein the column further comprises a first portion that is associated with a first voltage level and a second portion that is associated with a second voltage level.

15. (Currently Amended) The system of claim 13 whereas wherein the first portion of the column is positioned below the second portion and wherein the first voltage potential difference is smaller than the second voltage potential difference.

16. (Currently Amended) The system of claim 13 further comprises comprising a processor for processing the received detection signals to provide an indication about a defect or a process variation.

17. (Original) The system of claim 13 further adapted to vary the substantial electrostatic field to alter the collection zones of the multiple interior detectors.

18. (Cancelled)

19. (Currently Amended) The system of claim 13 wherein an inspected area of the inspected object is positioned within the substantial electrostatic lens.

20. (Original) The system of claim 13 further capable of introducing a tilt between the primary electron beam and the inspected area.

21. (Original) The system of claim 13 wherein detected electrons include electrons from a lower portion of a high aspect ratio hole.